09/014453

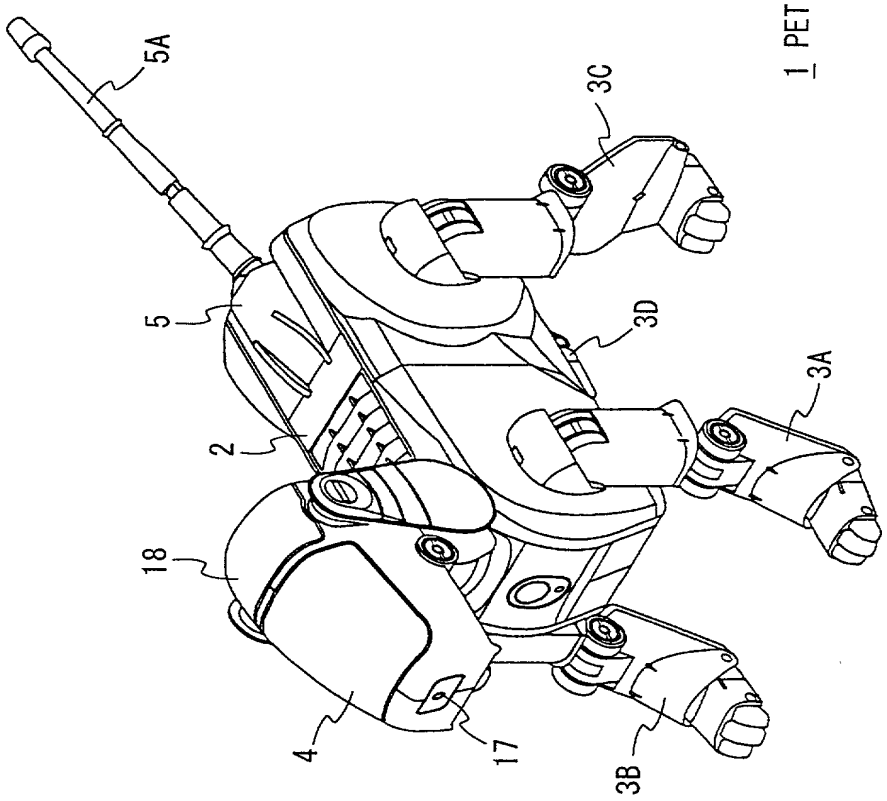


FIG. 1

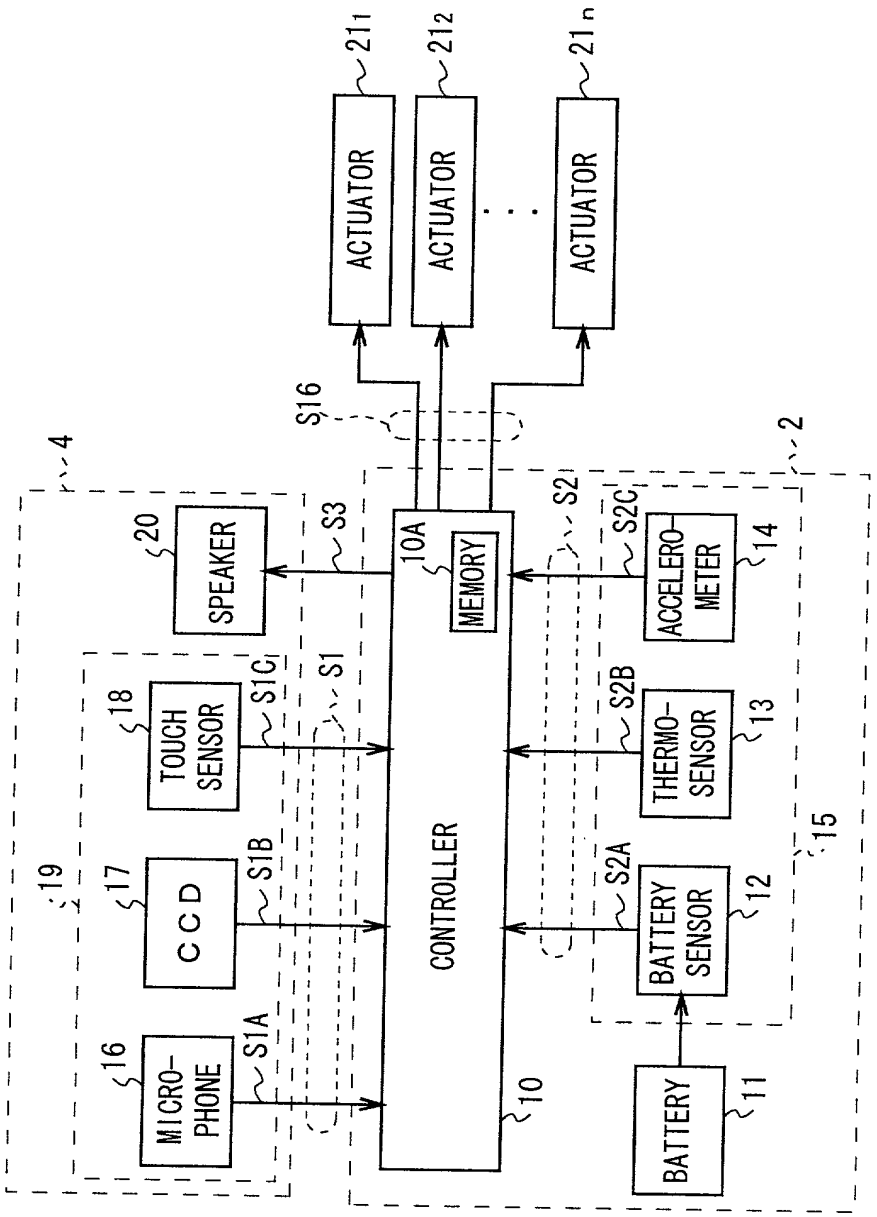

ACTUATOR
ACTUATOR
ACTUATOR
211
212
21n
S16
4
2
SPEAKER
20
S3
10A
MEMORY
S2
S2C
ACCELERO-METER
14
TOUCH SENSOR
18
S1C
S1
S2B
THERMO-SENSOR
13
19
CCD
17
S1B
CONTROLLER
S2A
BATTERY SENSOR
12
15
MICRO-PHONE
16
S1A
10
BATTERY
11

FIG. 2

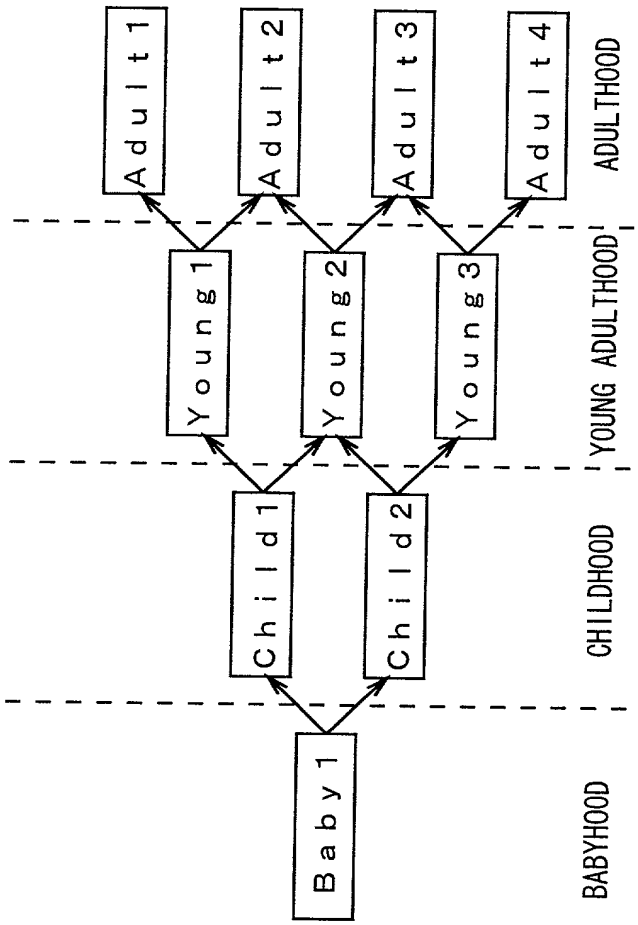

Adult1
Adult2
Adult3
Adult4
Young1
Young2
Young3
Child1
Child2
Baby1
ADULTHOOD
YOUNG ADULTHOOD
CHILDHOOD
BABYHOOD

FIG.3

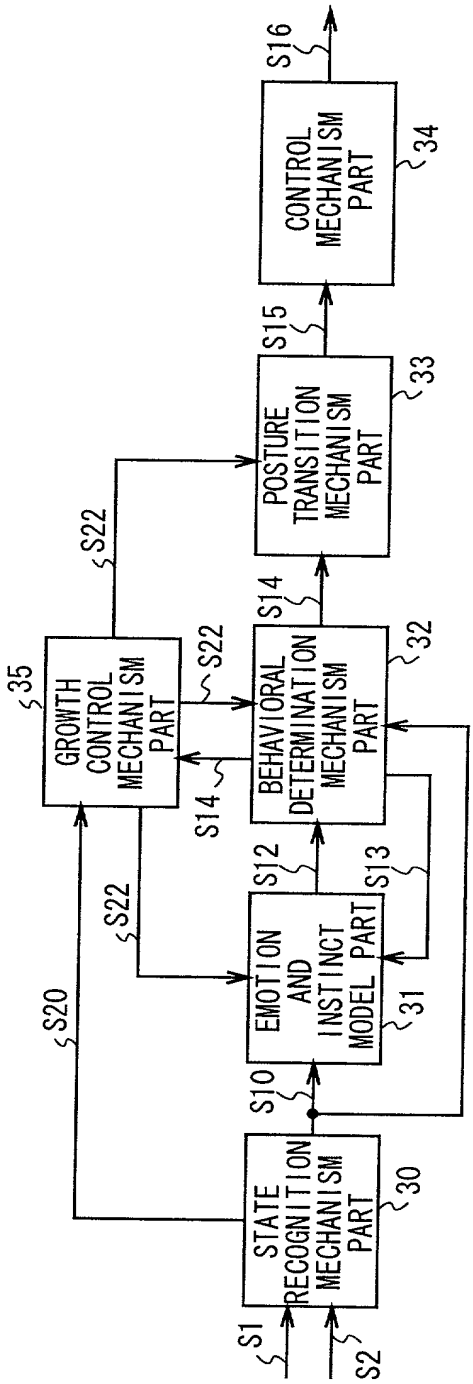

S1
S2
STATE RECOGNITION MECHANISM PART
30
S10
EMOTION AND INSTINCT MODEL PART
31
S12
S13
BEHAVIORAL DETERMINATION MECHANISM PART
32
S14
POSTURE TRANSITION MECHANISM PART
33
S15
CONTROL MECHANISM PART
34
S16
GROWTH CONTROL MECHANISM PART
35
S20
S22
S22
S22

FIG. 4

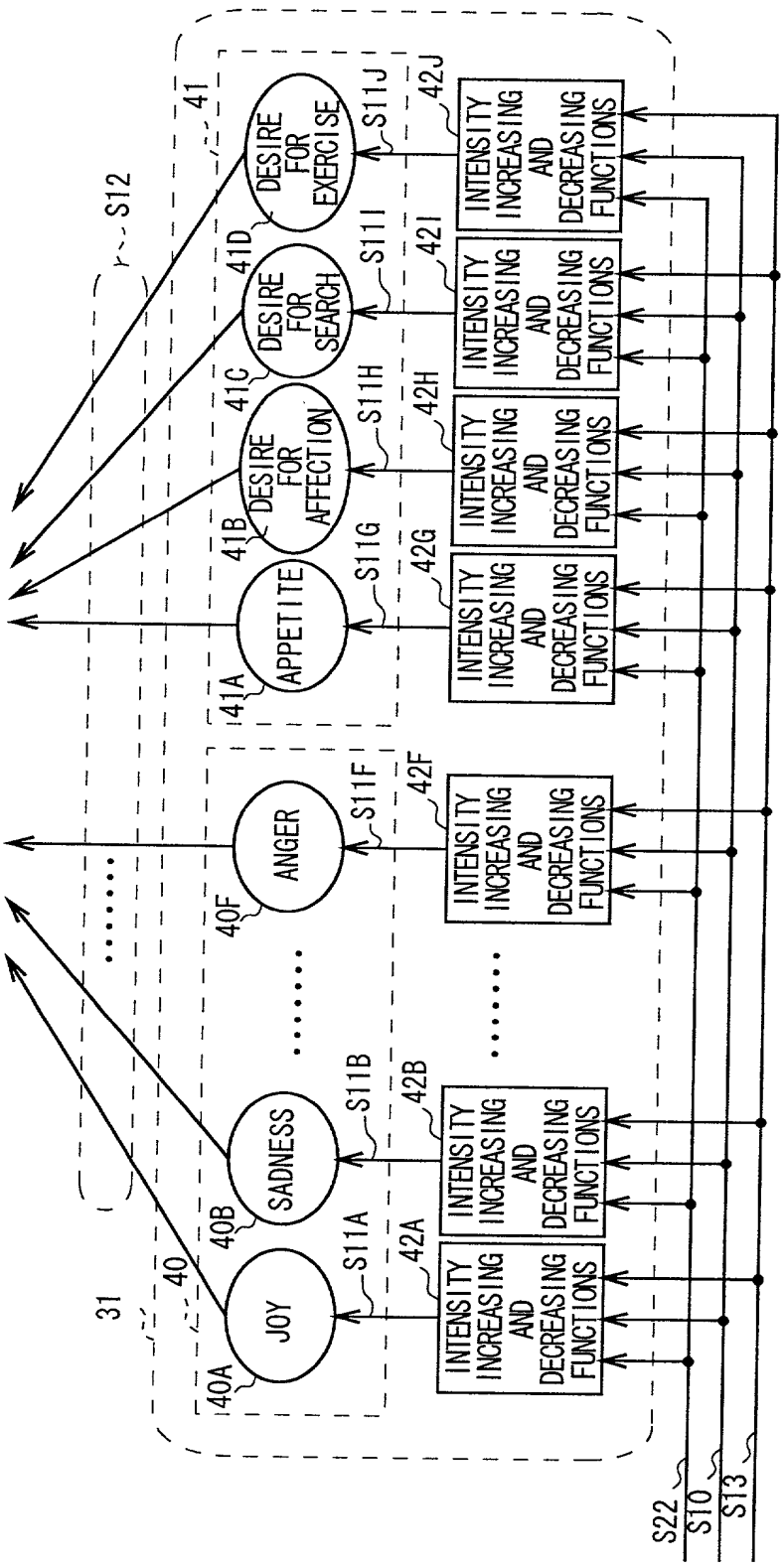

31
40
41
S12
40A
JOY
40B
SADNESS
40F
ANGER
41A
APPETITE
41B
DESIRE FOR AFFECTION
41C
DESIRE FOR SEARCH
41D
DESIRE FOR EXERCISE
S11A
S11B
S11F
S11G
S11H
S11I
S11J
42A
42B
42F
42G
42H
42I
42J
INTENSITY INCREASING AND DECREASING FUNCTIONS
S22
S10
S13

FIG. 5

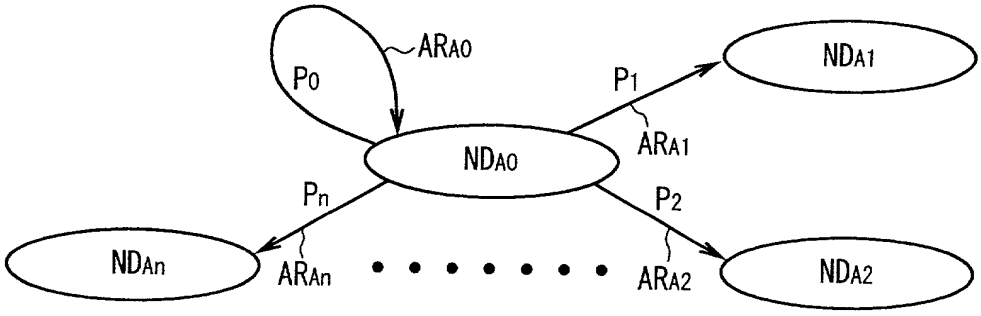

ARA0
P0
NDA1
P1
ARA1
NDA0
Pn
P2
NDAn
ARAn
ARA2
NDA2

FIG. 6

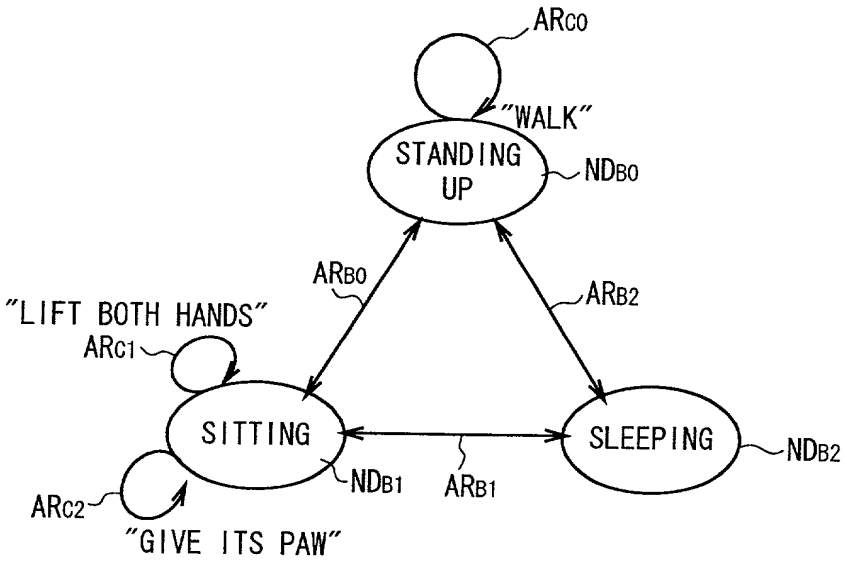
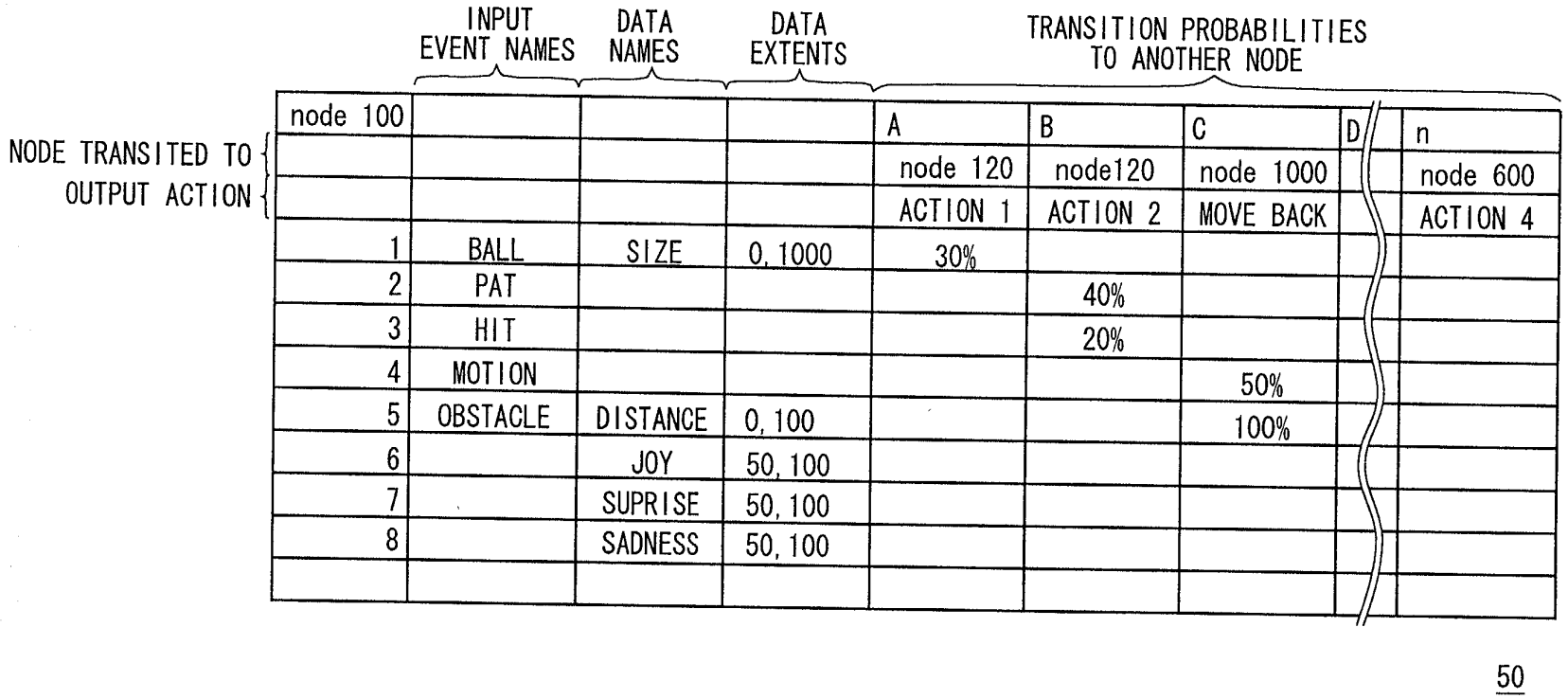

ARC0
"WALK"
STANDING UP
NDB0
ARB0
ARB2
"LIFT BOTH HANDS"
ARC1
SITTING
SLEEPING
NDB2
NDB1
ARB1
ARC2
"GIVE ITS PAW"

FIG. 8

JP2000-194453



	INPUT EVENT NAMES	DATA NAMES	DATA EXTENTS	TRANSITION PROBABILITIES TO ANOTHER NODE				
node 100				A	B	C	D	n
NODE TRANSITED TO				node 120	node120	node 1000		node 600
OUTPUT ACTION				ACTION 1	ACTION 2	MOVE BACK		ACTION 4
1	BALL	SIZE	0, 1000	30%				
2	PAT				40%			
3	HIT				20%			
4	MOTION					50%		
5	OBSTACLE	DISTANCE	0, 100			100%		
6		JOY	50, 100					
7		SUPRISE	50, 100					
8		SADNESS	50, 100					

50

FIG. 7

09/914453

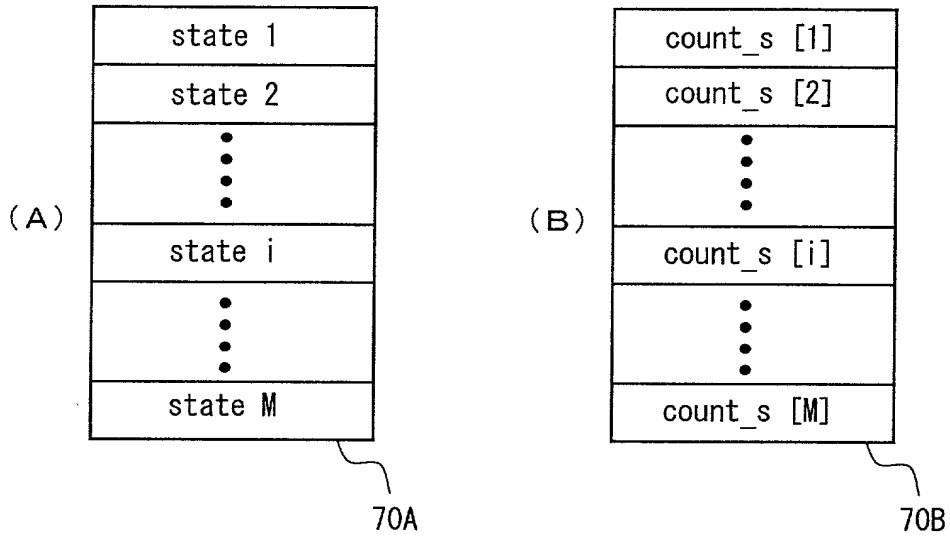

(A)
state 1
state 2
state i
state M
70A
(B)
count_s [1]
count_s [2]
count_s [i]
count_s [M]
70B

FIG. 9

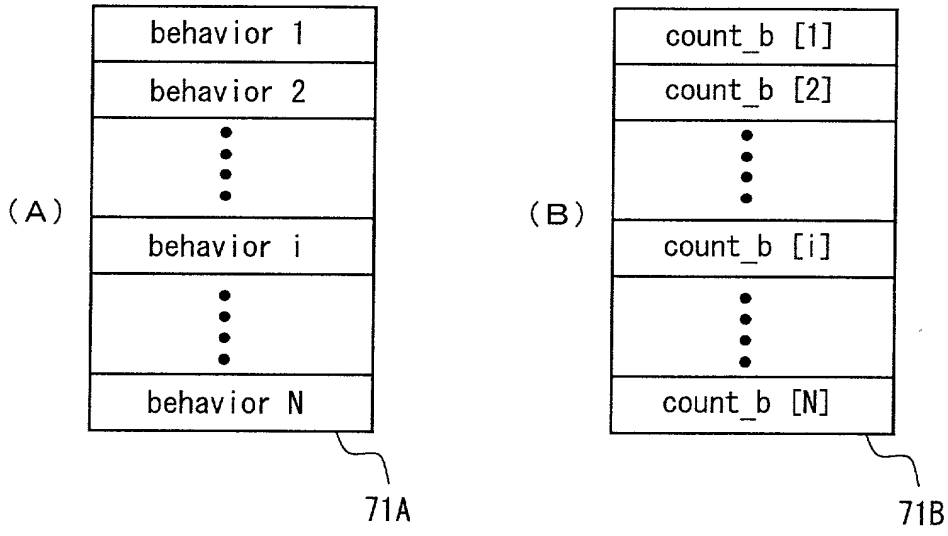

(A)
behavior 1
behavior 2
behavior i
behavior N
71A
(B)
count_b [1]
count_b [2]
count_b [i]
count_b [N]
71B

FIG. 10

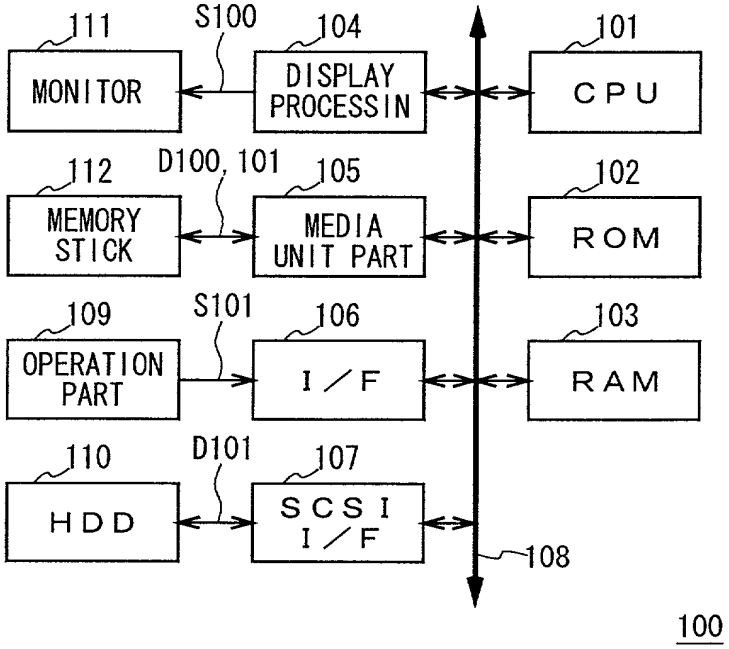

111
S100
104
101
MONITOR
DISPLAY PROCESSIN
CPU
112
D100, 101
105
102
MEMORY STICK
MEDIA UNIT PART
ROM
109
S101
106
103
OPERATION PART
I／F
RAM
110
D101
107
HDD
SCSI I／F
108
100

FIG. 11

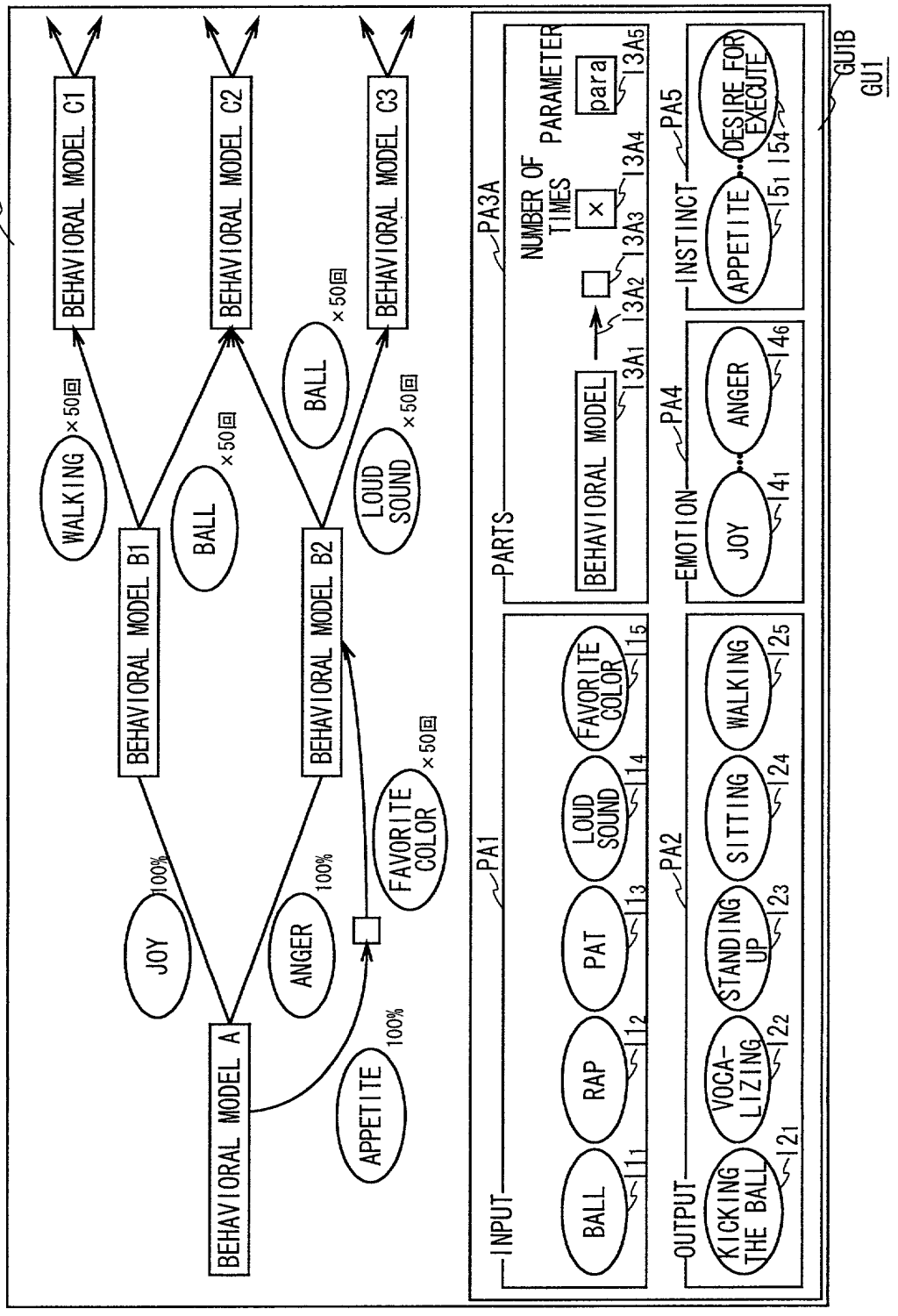

GU1A
BEHAVIORAL MODEL C1
BEHAVIORAL MODEL C2
BEHAVIORAL MODEL C3
WALKING
×50回
BALL
×50回
BALL
×50回
LOUD SOUND
×50回
BEHAVIORAL MODEL B1
BEHAVIORAL MODEL B2
JOY
100%
ANGER
100%
APPETITE
100%
FAVORITE COLOR
×50回
BEHAVIORAL MODEL A
PA1
INPUT
BALL
11
RAP
12
PAT
13
LOUD SOUND
14
FAVORITE COLOR
15
PA2
OUTPUT
KICKING THE BALL
21
VOCA-LIZING
22
STANDING UP
23
SITTING
24
WALKING
25
PA3A
PARTS
BEHAVIORAL MODEL
13A1
13A2
NUMBER OF TIMES
×
13A3
13A4
PARAMETER
para
13A5
PA4
EMOTION
JOY
41
ANGER
46
PA5
INSTINCT
APPETITE
51
DESIRE FOR EXECUTE
54
GU1B
GU1

FIG. 12

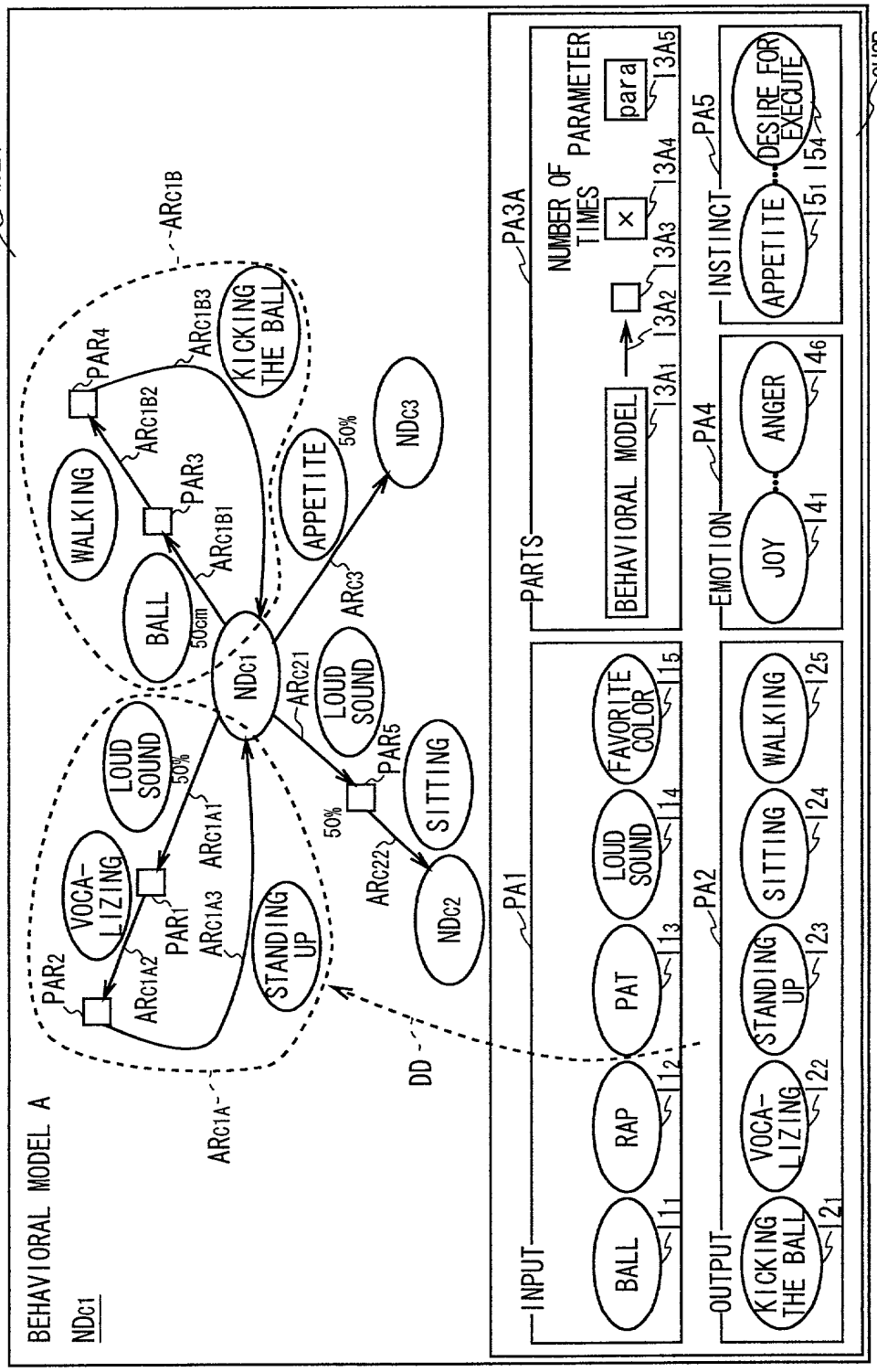

GU2A
BEHAVIORAL MODEL A
NDc1
ARc1A
ARc1B
PAR1
PAR2
PAR3
PAR4
PAR5
ARc1A1
ARc1A2
ARc1A3
ARc1B1
ARc1B2
ARc1B3
ARc21
ARc22
ARc3
VOCA-LIZING
LOUD SOUND
50%
STANDING UP
BALL
50cm
WALKING
KICKING THE BALL
NDc1
LOUD SOUND
50%
SITTING
NDc2
APPETITE
50%
NDc3
DD
PA1
INPUT
BALL
11
RAP
12
PAT
13
LOUD SOUND
14
FAVORITE COLOR
15
PA2
OUTPUT
KICKING THE BALL
21
VOCA-LIZING
22
STANDING UP
23
SITTING
24
WALKING
25
PA3A
PARTS
BEHAVIORAL MODEL
13A1
13A2
NUMBER OF TIMES
13A3
×
13A4
PARAMETER
para
13A5
PA4
EMOTION
JOY
41
ANGER
46
PA5
INSTINCT
APPETITE
51
DESIRE FOR EXECUTE
54
GU2B
GU2

FIG. 13

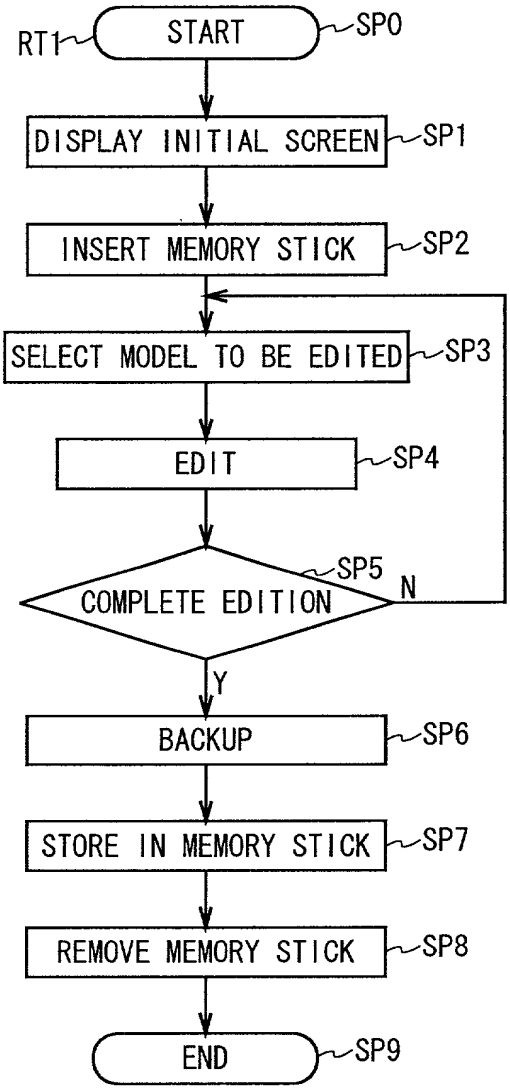

RT1
START
SP0
DISPLAY INITIAL SCREEN
SP1
INSERT MEMORY STICK
SP2
SELECT MODEL TO BE EDITED
SP3
EDIT
SP4
COMPLETE EDITION
SP5
N
Y
BACKUP
SP6
STORE IN MEMORY STICK
SP7
REMOVE MEMORY STICK
SP8
END
SP9

FIG. 14

Explanation of Reference Numerals

1 ... pet robot, 10 ... controller, 10A ... memory, 15 ... internal sensor part, 19 ... external sensor part, 21_1 - 21_n ... actuator, 30 ... state recognition mechanism part, 31 ... emotion and instinct model part, 32 ... behavioral determination mechanism part, 33 ... posture transition mechanism part, 34 ... control mechanism part, 35 ... growth control mechanism part, 60 - 63 ... directed graph, 70A, 70B ... growth element list, 70B, 71B ... growth element counter tables, 100... editing apparatus, 101 ... CPU, 102 ... ROM, 103 ... RAM, 104 ... display processing circuit, 105 ... media unit, 112 ... memory stick, S1 ... external information signal, S2 ... internal information signal, S10, S20 ... state recognition information, S14 ... behavioral determination information, S22 ... change command information, S100 ... video signal, S101 ... command, D100 ... various information, S101 ... editing data, GU1 ... growth model edit screen, GU2 ... behavioral model edit screen, RT1 ... editing procedure.